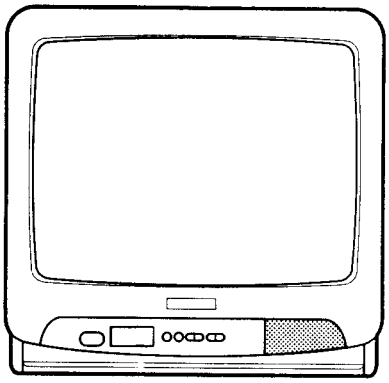
GoldStar

COLOUR TV SERVICE MANUAL

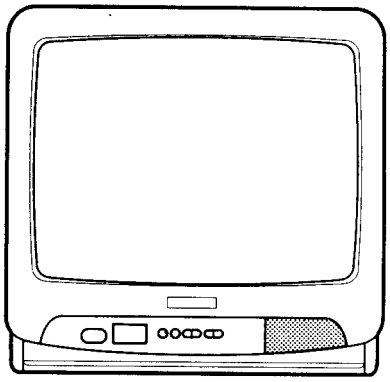
CAUTION

BEFORE SERVICING THE CHASSIS, READ THE "SAFETY PRECAUTIONS" IN THIS MANUAL.

MODEL : CB-14A80



MODEL : CB-20A80

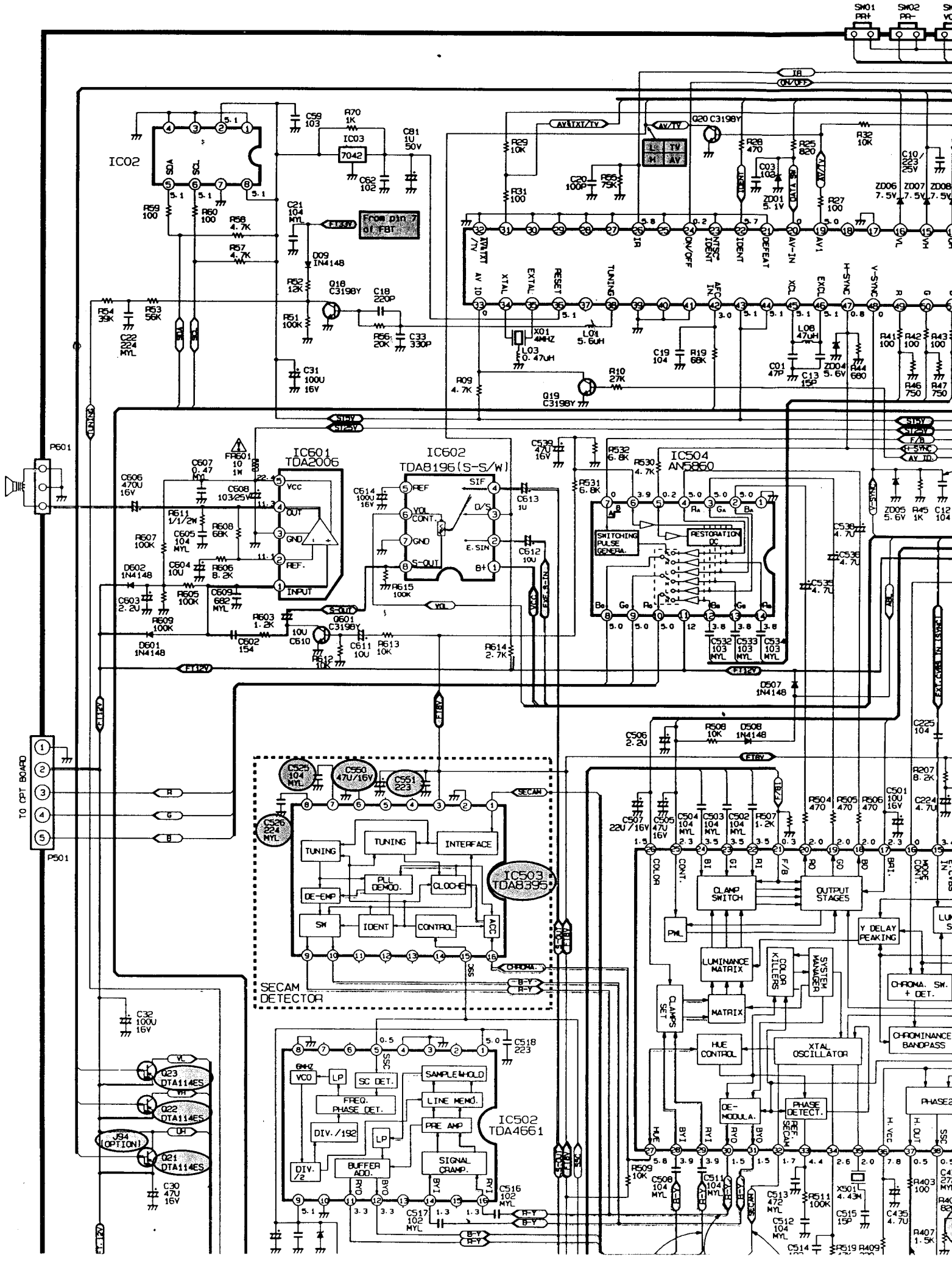


CHASSIS : PC-31A

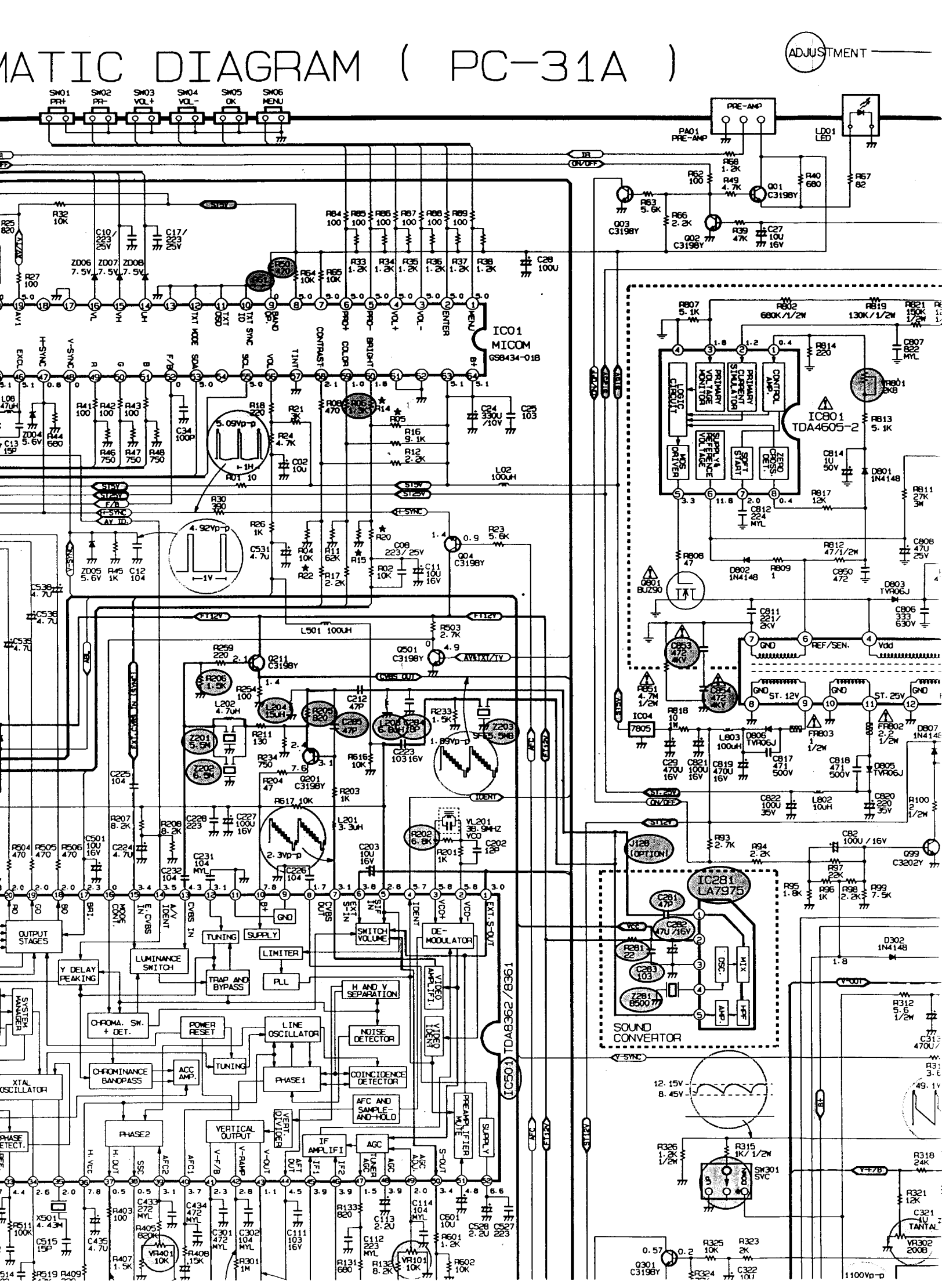
MODEL : CB-14A80
CB-20A80

GoldStar

SCHEMATIC


IC02
IC501 TDA2006
IC502 TDA4661
IC503 TDA8395
IC504 AN5860
IC602 TDA8196(S-S/W)
SECAM DETECTOR
TO CPT BOARD
P501
P601
CLAMP SWITCH
OUTPUT STAGES
LUMINANCE MATRIX
COLOR KILLERS
SYSTEM MANAGER
CLAMPS SET
MATRIX
HUE CONTROL
XTAL OSCILLATOR
CHROMINANCE BANDPASS
CHROMA. SW. + DET.
Y DELAY PEAKING
PHASE DETECT.
DE-MODULA.
SAMPLE&HOLD
LINE MEMO.
PRE AMP
SIGNAL CRAMP.
BUFFER ADJ.
SC DET.
FREQ. PHASE DET.
SWITCHING PULSE GENERA.
RESTORATION DC
TUNING
INTERFACE
PLL DEMOD.
CLOCHE
DE-EMP
IDENT
CONTROL
ACC
From pin 7 of FBT
Q20 C3198Y
Q19 C3198Y
Q18 C3198Y
Q23 DTA114ES
Q22 DTA114ES
Q21 DTA114ES
D507 1N4148
D508 1N4148
D601 1N4148
D602 1N4148
D09 IN4148
X01 4MHZ
X501 4.43M

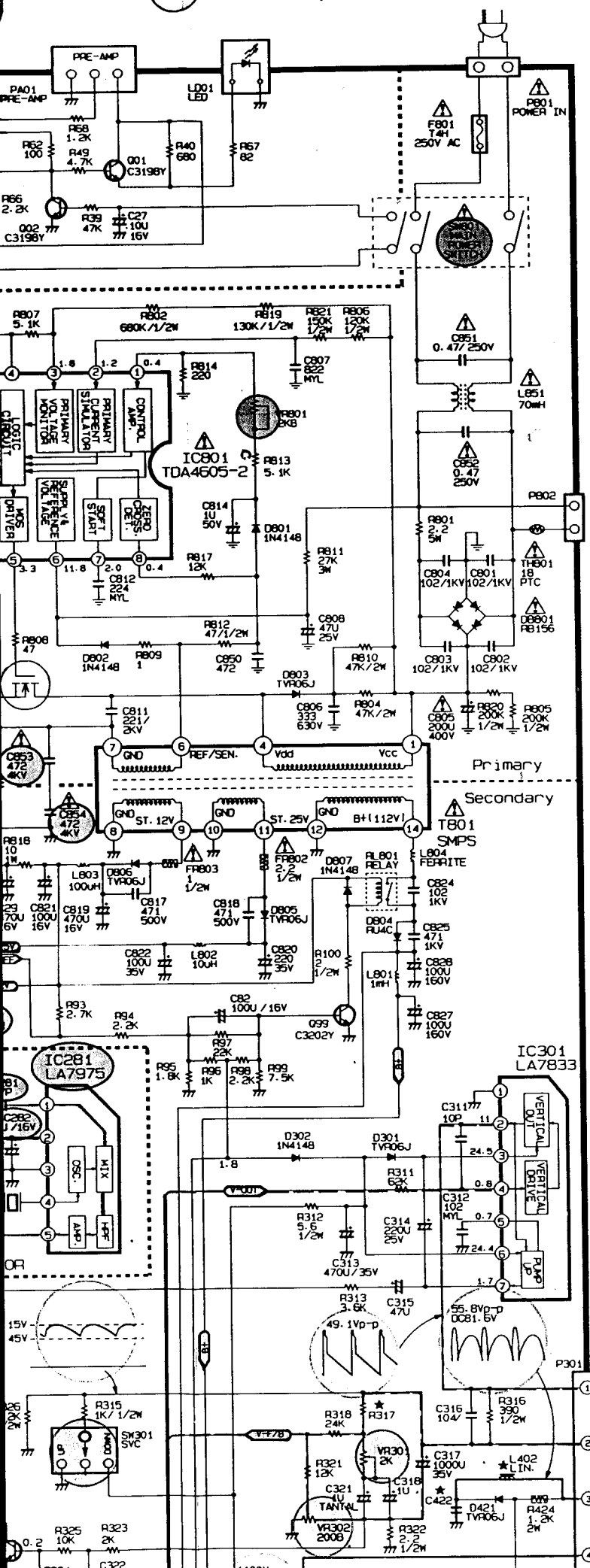
MATIC DIAGRAM (PC-31A)

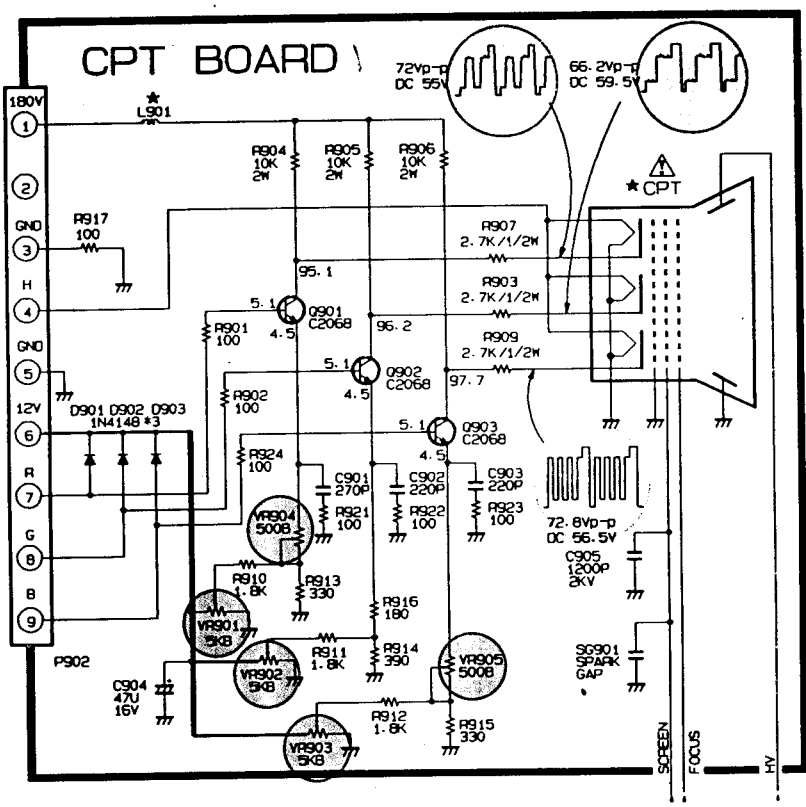


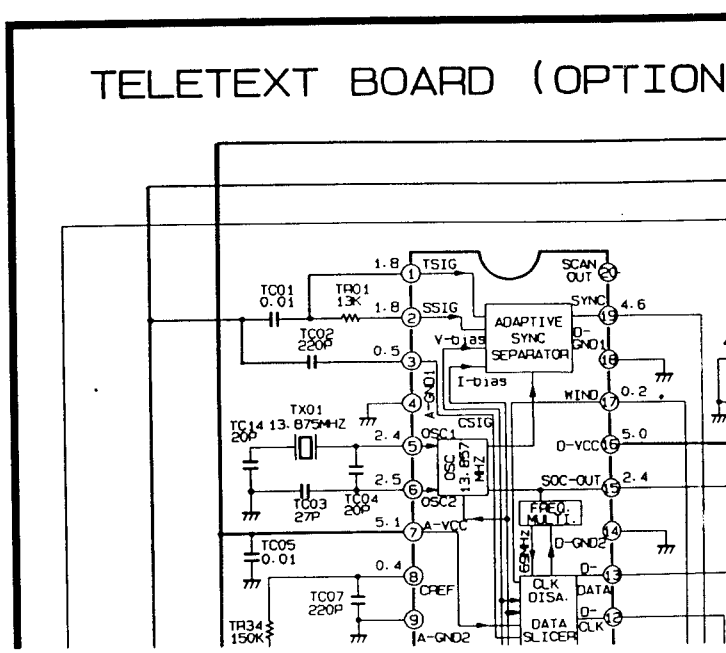
ADJUSTMENT ——— SIF/SOUND - - - - EXT.SOUND POWER ——— HORIZONTAL - - - - VERTICAL

★THE TABLE OF INCH CONVERSION

CIRCUIT NO	14"	20"	21"	REMARK
C P T	A34KPU02XX	A48KVK02XX	A51KPD12XX	CPT
D Y	113V	151D	110F	153-
T401	064P	106C	194D	FBT(154-)
C421	602H	862H	822H	MPP 1.6KV
C422	394	474	474	MPP 200V
L402	224L	224C	224C	COIL(150-)
L901	10uH	10uH	100uH	COIL
FR404	10	2	3.9	RES. FUSIBLE 1W
FR406	5.6	2	3	RES. FUSIBLE 1W
R05	1.5K	1.8K	1.8K	RES. FIXED 1/6W
R14	820	330	330	RES. FIXED 1/6W
R15	12K	6.8K	6.8K	RES. FIXED 1/6W
R20	2.7K	4.7K	4.7K	RES. FIXED 1/6W
R22	6.8K	4.7K	5.6K	RES. FIXED 1/6W
R317	22K	22K	27K	RES. FIXED 1/6W
R437	68K	56K	56K	RES. FIXED 1/2W
R438	82K	68K	68K	RES. FIXED 1/2W

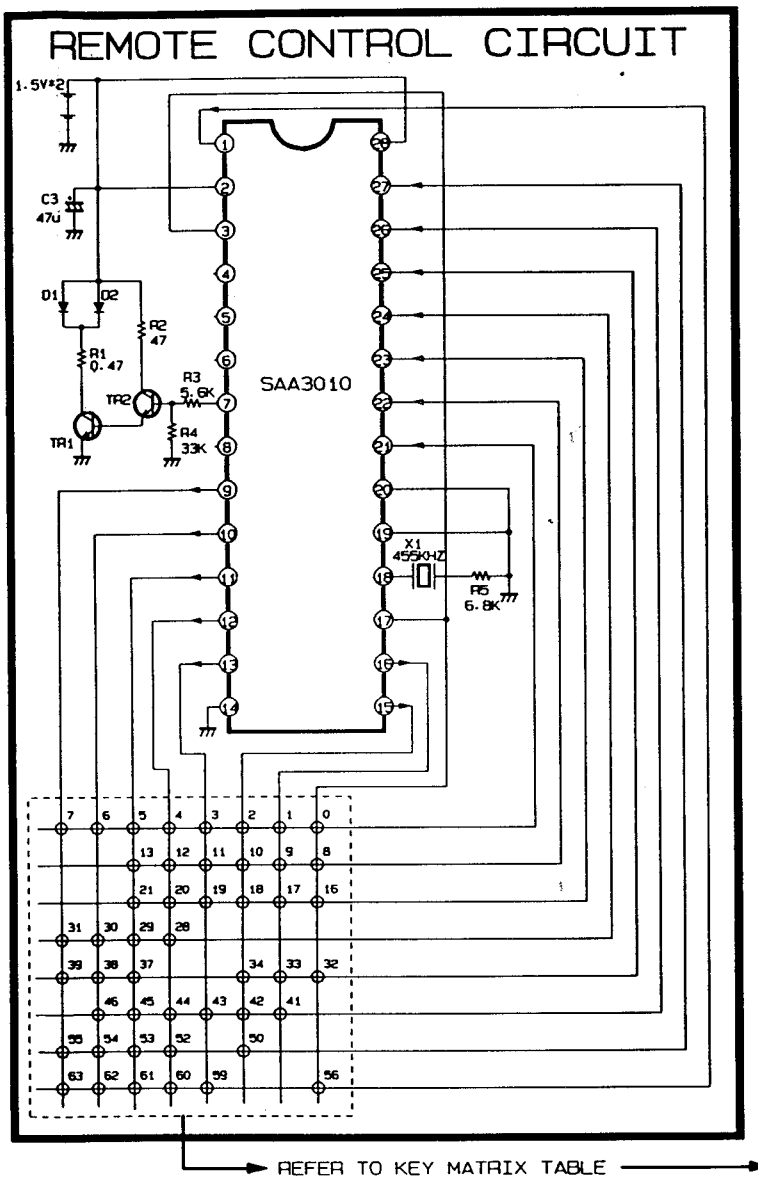






P/N : 484-856B-S

DATE : JUN. 1, 1994



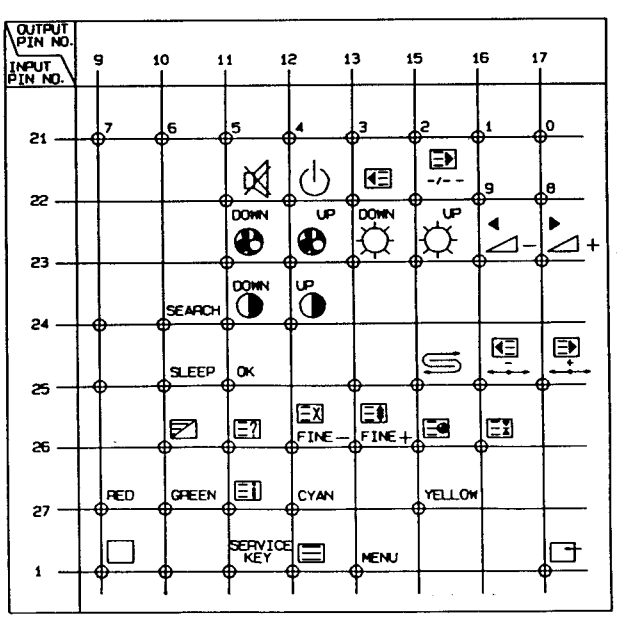
● THE TABLE OF RECEIVING SYSTEM

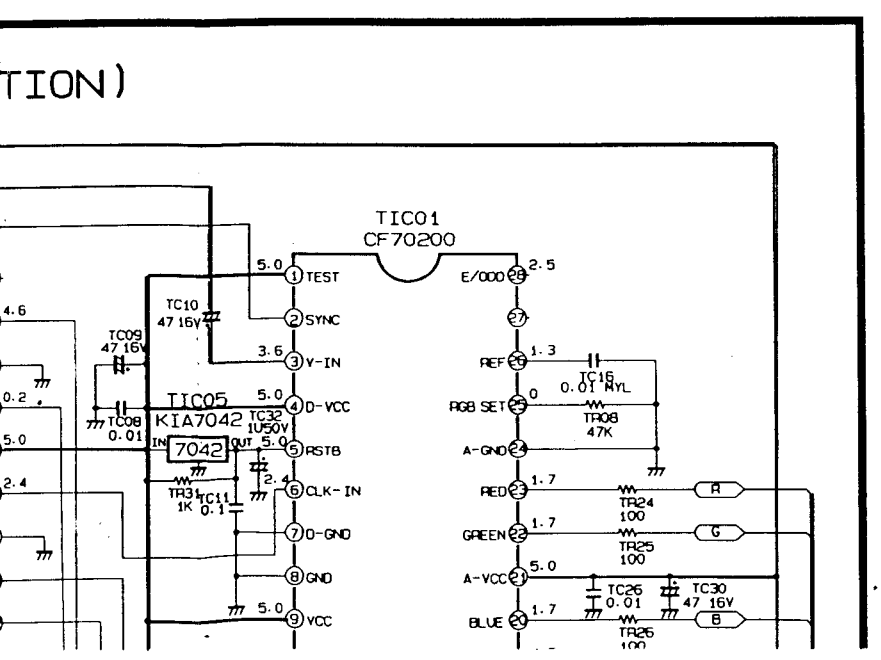
	B / H	B / G	D / K	I	REMARKS
	1.5K	1.3K	1.8K	1.5K	CARBON FILM RESISTOR
	-	-	22	-	
	-	-	1.5K	-	
	6.8K	6.8K	10K	6.8K	
	6.8UH	6.8UH	10UH	6.8UH	INDUCTOR
	33UH	15UH	2.2UH	8.2UH	INDUCTOR
	TIN WIRE	TIN WIRE	47pF	TIN WIRE	CAP. TUBULAR
	-	-	47u/16V	-	CAP. CE
	-	-	103p	-	CAP. TUBULAR
	-	-	18P	-	CAP. TUBULAR
	-	-	47P	-	CAP. TUBULAR
	-	-	104J 50V	-	CAP. MYLAR
	-	-	224J 50V	-	
	-	-	47U/16V	-	CAP. CE
	-	-	0.022u/50V	-	CAP. CERAMIC
	474 250V	474 250V	154 250V	-	X-CAPACITOR
	TIN WIRE	4700/4KV	4700/4KV	TIN WIRE	Y-CAPACITOR
	2200/2KV	4700/4KV	4700/4KV	2200p/4KV	
	DIA114ES	DIA114ES	DIA114ES	-	TRANSISTOR
	DIA114ES	DIA114ES	DIA114ES	-	TRANSISTOR
	DIA114ES	DIA114ES	DIA114ES	-	TRANSISTOR
IC201	-	-	LA7975	-	S-CONVERTOR
IC501	TDA8361	TDA8361	TDA8362	TDA8361	JUNGLE
IC401	-	-	TDA8395/N1	-	SECAM
Z101	G1966M	G1966M	K1950	J1953M	SAW FILTER
Z201	TPS5.5M	TPS5.5M	TPS5.5M	TPS6.0M	FILTER TRAP
Z202	TPS6.5M	TPS6.5M	TPS6.5M	TP6.5M	
Z203	5.5M	5.5M	6.0M	6.0M	FILTER BPF
Z281	-	-	CS8500	-	RESONATOR
TI01	2388	2388	2380	238E	TUNER
		238C	238F	-	TUNER (HYPER BAND)
J94	-	-	-	TIN WIRE	
J128	TIN WIRE	TIN WIRE	-	TIN WIRE	
R50	-	-	-	470	
R61	TIN WIRE	TIN WIRE	TIN WIRE	-	
R205	820	820	-	820	

● TEXT LANGUAGE & MODE OPTION FOR U-COM IC(IC01)

FUNCTION / PIN NO.	LANGUAGE		MODE		REMARKS
	WEST	EAST	TOP/FLOF	FLOF	
PIN 11	LOW(0)	HIGH(1)	-	-	LOW(0) : GND
PIN 12	-	-	HIGH(1)	LOW(0)	HIGH(1) : 5V

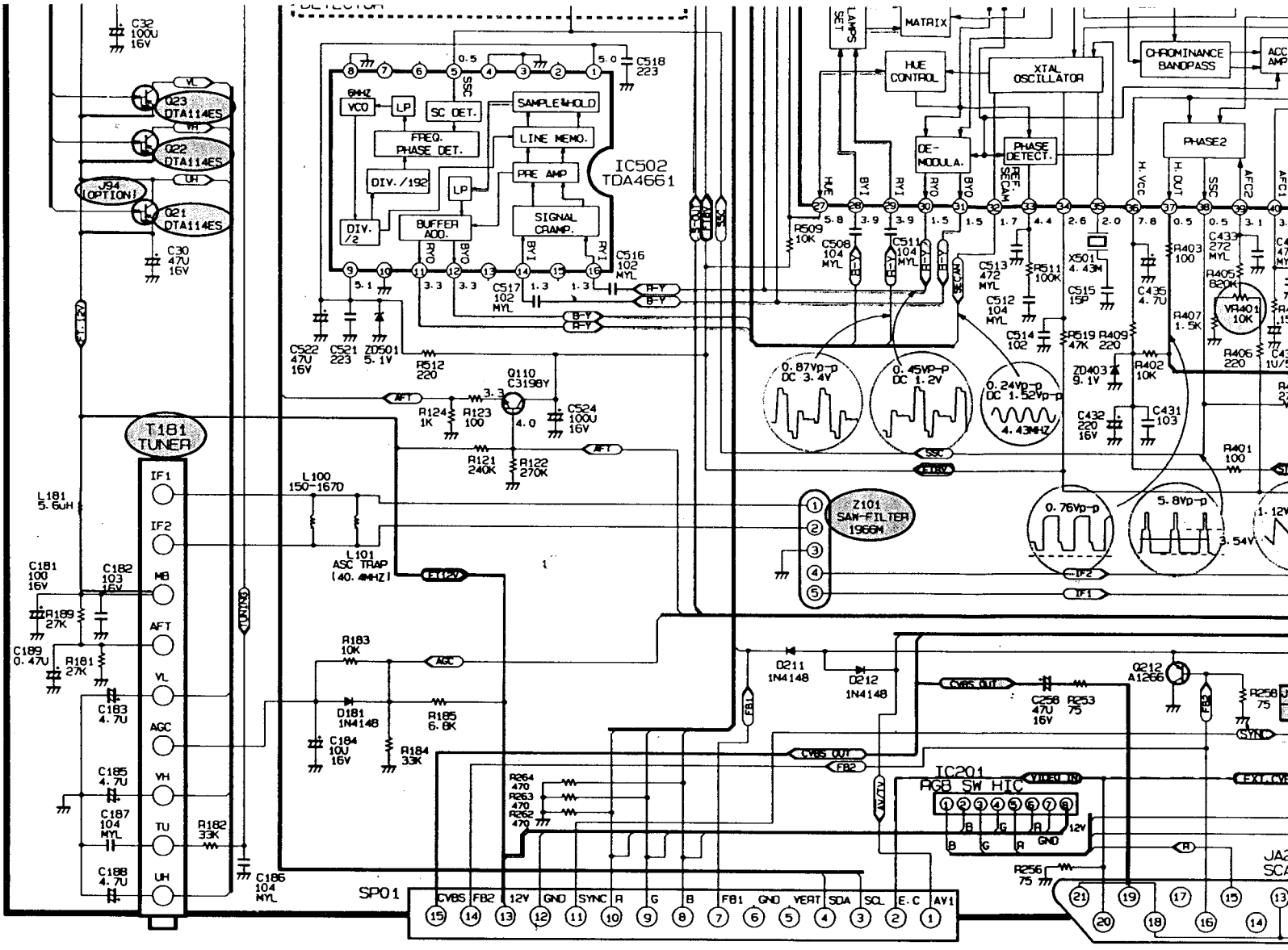
● KEY MATRIX TABLE





NOTICE

Since this is basic circuit diagram, the value of components and some partical connection are subject to change for improvement.



■ TroubleShooting Guide

PRESET CONTROL
Brightness - Fully Up
Contrast - Fully Up
Colour - Fully Up
Volume - Mid range or adjust as need

DEAD SET (NO RASTER/NO SOUND)

Check +B voltage at TP1 (R437)

130 - 140V

Check stand-by 12V at C821 (+)

0V

Check/Replace FR803, D806, L803

7-9V

Check/Replace IC501

0V

Check/Replace FR402, D402, R432, R433, IC401

0V

Check/Replace ZD402, Q402, D410

112V (Normal)

Check heater elements of CRT are lighting or not.

No

Check/Replace FR404, FR406

Yes

Check the voltage at C415 (+)

12V

Check the voltage of pin10 of IC501

8V

Check/Replace IC501

0V

Check the rectified voltage of main power at C805 (+)

0V

Check/Replace F801, DB801, R801

250-380V

Check the voltage of pin6 of IC801

Less than. 8V

Check/Replace R811

8-15V

Check/Replace IC801, Q801 Check the secondary voltage are short.

NO RASTER (SOUND OK)

Check heater elements of CRT are lighting

No

Check the AC voltage at pin1 of P901 on CPT board.

6.0-6.5Vrms

Check/Replace CPT

0Vrms

Check/Replace FR404, FR406

Yes

The screen is blinking

Check/Replace IC501

Abnormal

Realign White Balance

White

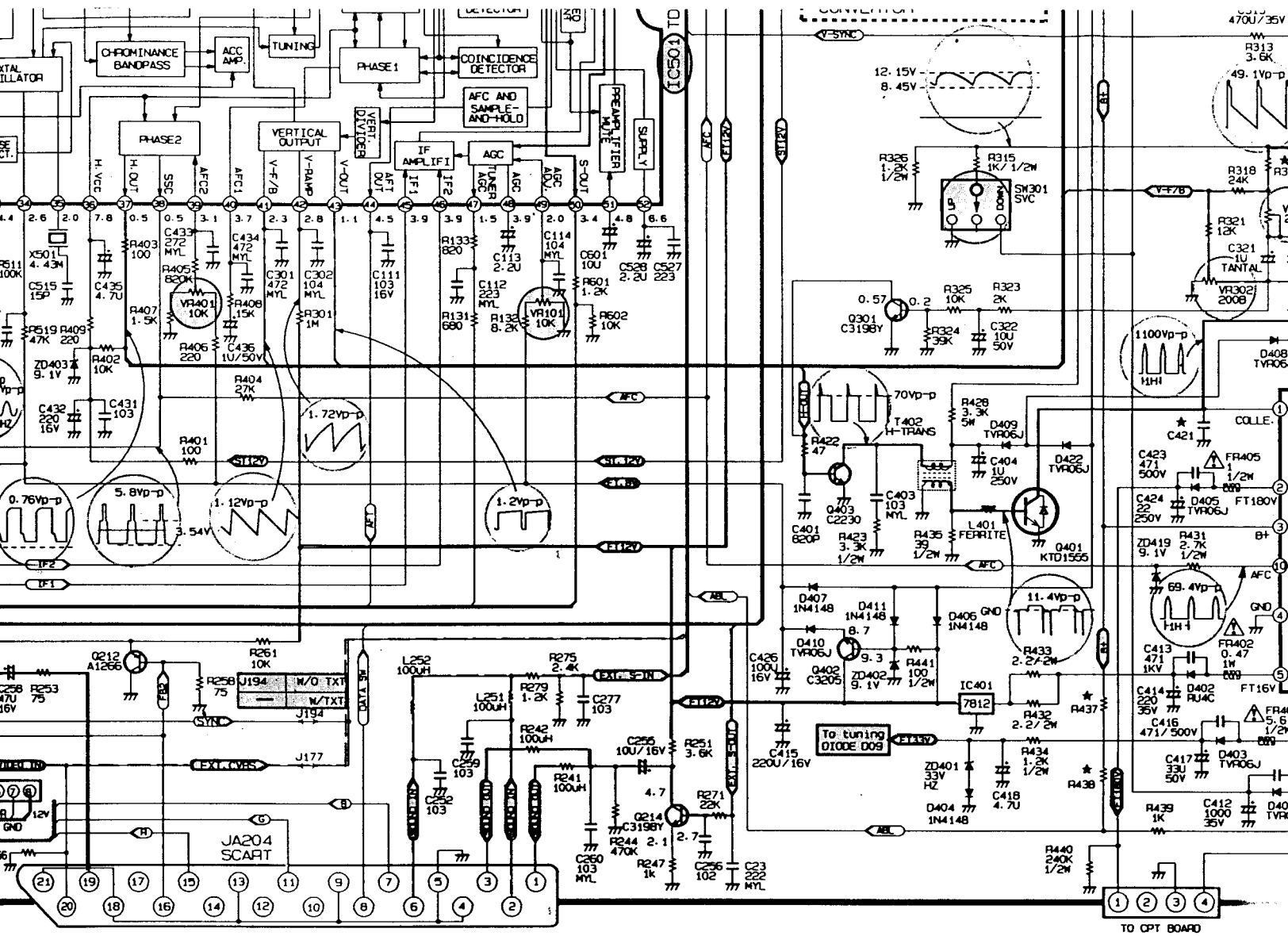
Check the 180V line at C424 (+)

Abnormal

Check/Replace FR405, D405

12V

Check/Replace D901-D903



NO RASTER (SOUND OK)

heater elements of CRT are lighting

Yes

The screen is blinking

Retrace line is visible

Check/Replace IC501

Check the screen voltage(G2) alignment is correct or not.

Abnormal

Normal

Realign White Balance

Check the screen colour

White

R/G/B

Check the 180V line at C424 (+)

Check the base voltages of Q901-Q903

Abnormal

Check/Replace FR405, D405

12V

4 - 5V

Check/Replace D901-D903

Check/Replace R904-R906 or soldering condition on CPT board.

NO SOUND (PICTURE OK)

Check the voltage of SMPS 25V at pin5 of IC601

Abnormal

Normal (20-25V)

Check/Replace FR802, D805, FR601

Check the voltage of pin16 of IC501

0V

10-12V

Check the soldering condition around IC601

Check/Replace Q501

Abnormal

Normal

Check/Replace IC01

Check the voltage of pin10 of IC501

7-9V

Check the voltage of pin5 of IC501

2-5V

Check/Replace IC601, IC602

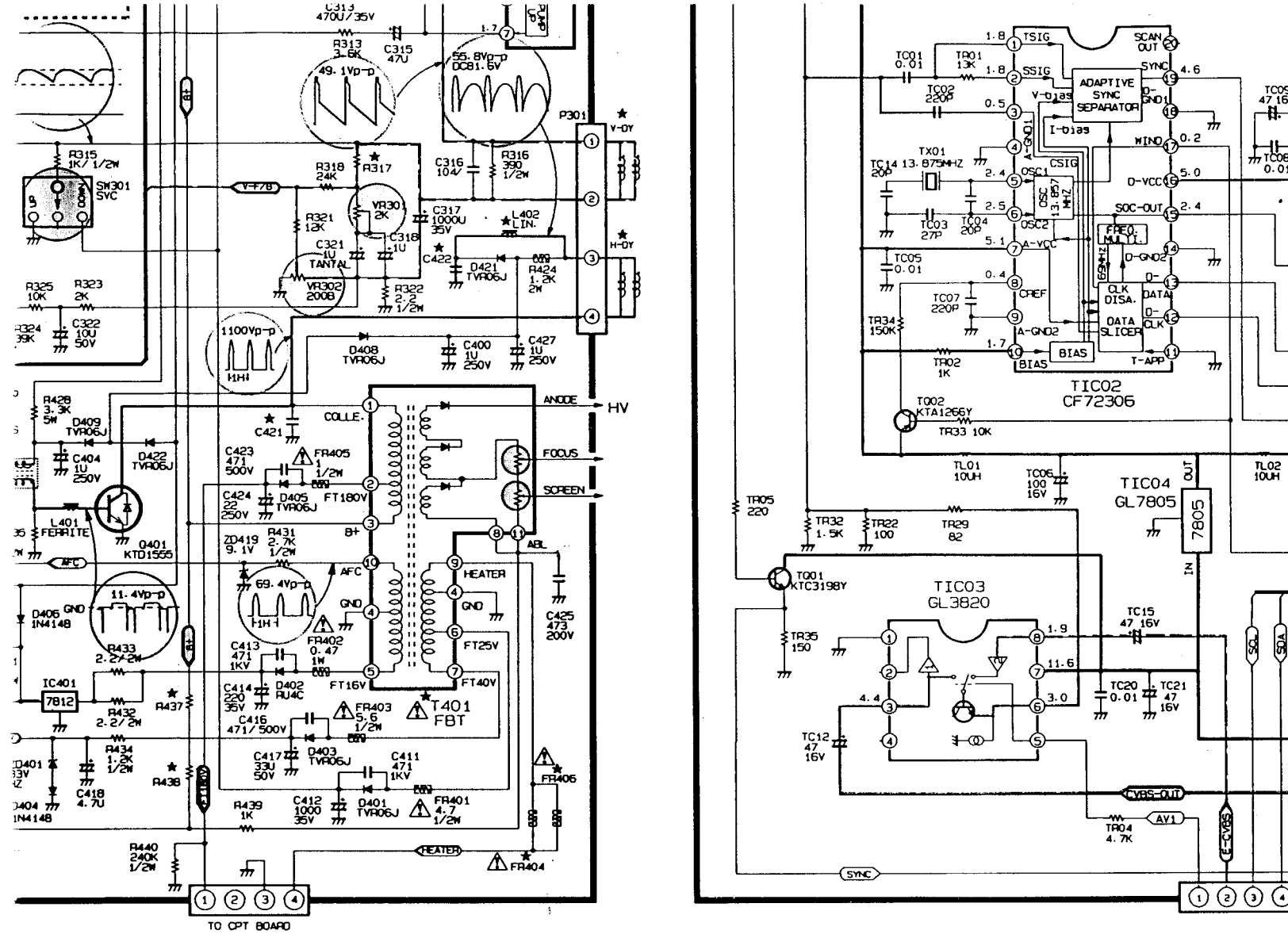
Check whether the voltage is swing or not at the pin56 of IC01 according to changing volume up/down

Abnormal

Check/Replace IC01

NOTE

Sound is muted whenever the screen is noise condition, that is, broadcasting signal is not found.



NO COLOUR

Check the frequency(4.4Mhz) at pin35 of IC501

- Abnormal → Check/replace X501
- Normal → Check the voltage of pin27 of IC501
  - Below 5V → Check/Replace IC501
  - OVER 5.5V → Check whether the voltage is swing or not at the pin59 of IC01 according to changing colour up/down.
    - Not → Check/Replace IC01
    - Swing → Check whether R-Y and B-Y are out at pin30 and pin31 of IC501
      - Not → Check/Replace IC501
      - Swing → Check whether R-Y and B-Y are out at pin9 and pin10 of IC503
        - No → Check/Replace IC503
        - Yes → Check whether R-Y and B-Y are out at pin11 and pin12 of IC502
          - No → Check/Replace IC502
          - Yes → Check whether R/G/B is out at pin20 and pin19 and pin18 of IC501
            - No → Check/Replace IC501

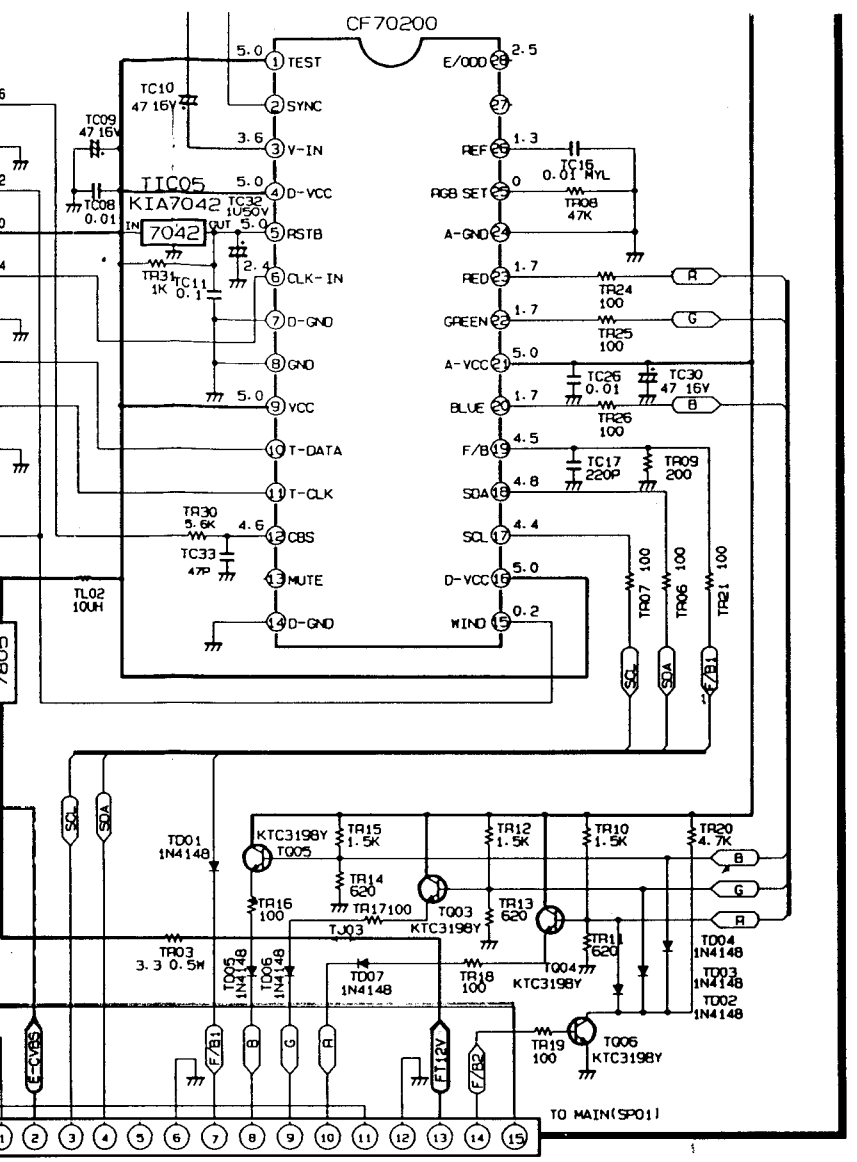
NOTE
Sound is muted whenever the screen is noise condition, that is, broadcasting signal is not found.

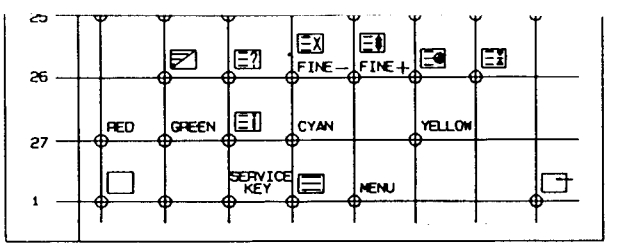
NO

Check

11.8-12.2

Check/Replace Tuner





NOTICE

Since this is basic circuit diagram, the value of components and some partical connection are subject to change for improvement.

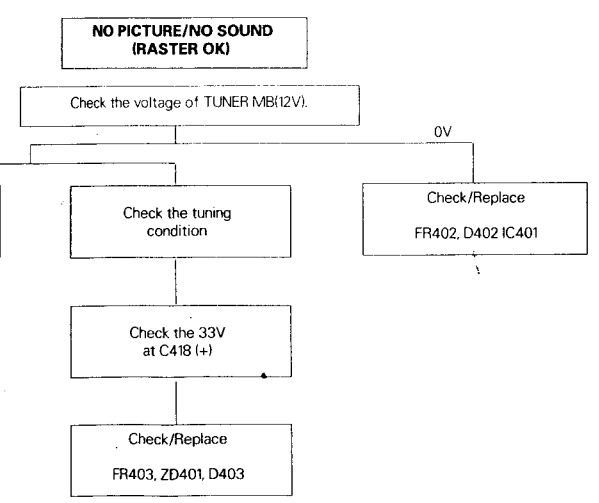
The components marked ⚠ conform to VDE or IEC guidelines and are essential for safe operation of the set. While those marked ⚠ are required for correct operation. Use specified parts only when replacing.

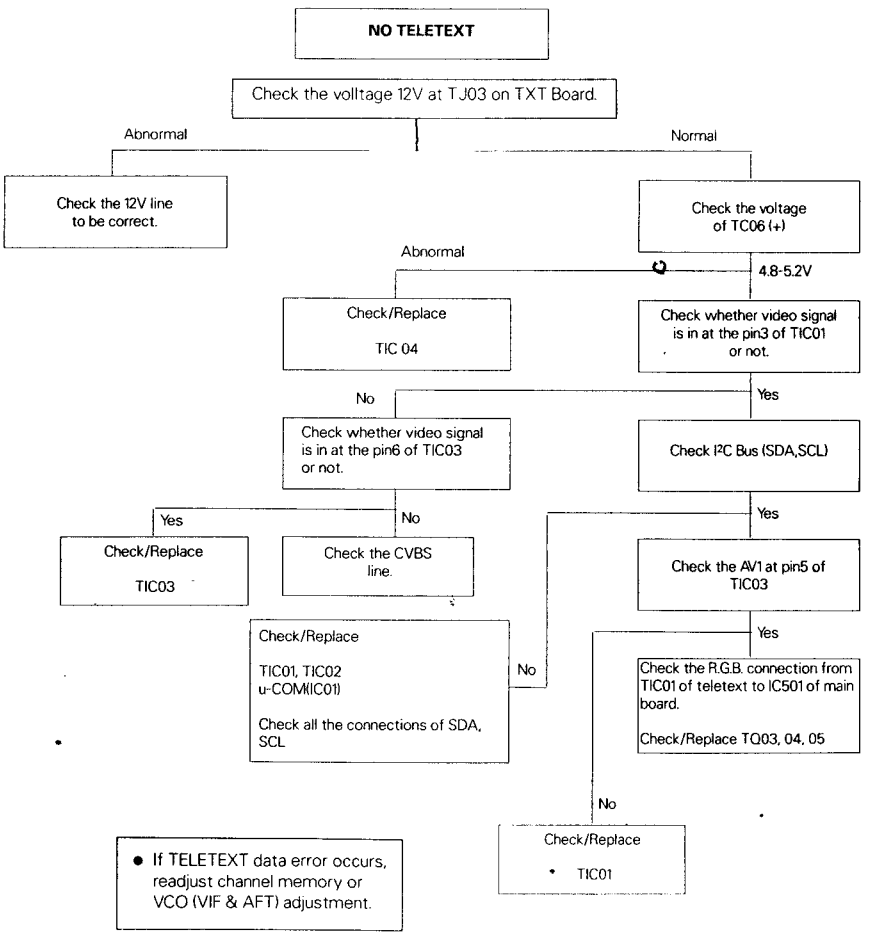
Value of resistor, capacitor and inductor

1. Resistances are shown in ohm, K=1,000, M=1,000,000.
2. Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in mfd and the values more than 1 in pF.
3. Unless otherwise noted in schematic, all inductor values more than 1 are expressed in uH and values less than 1 in Henry(H).

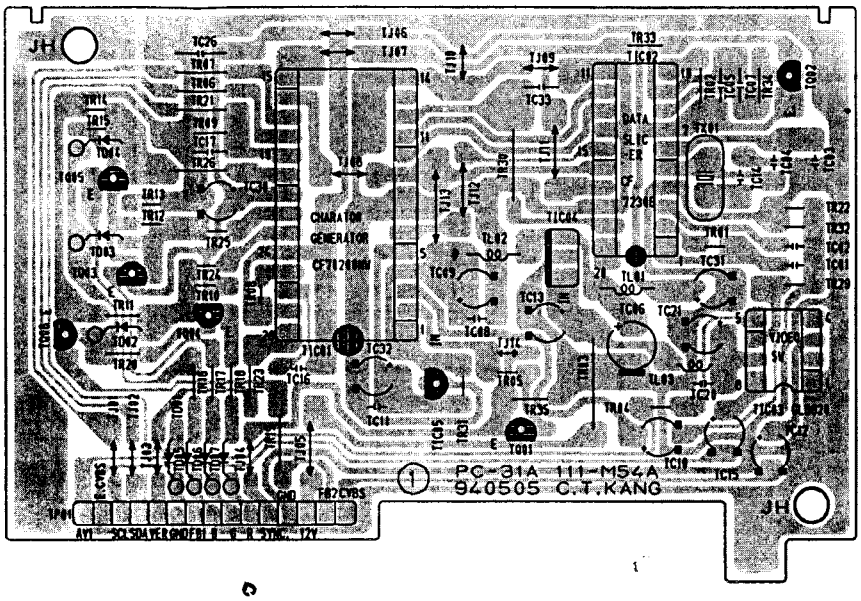
Observation of voltages and waveforms

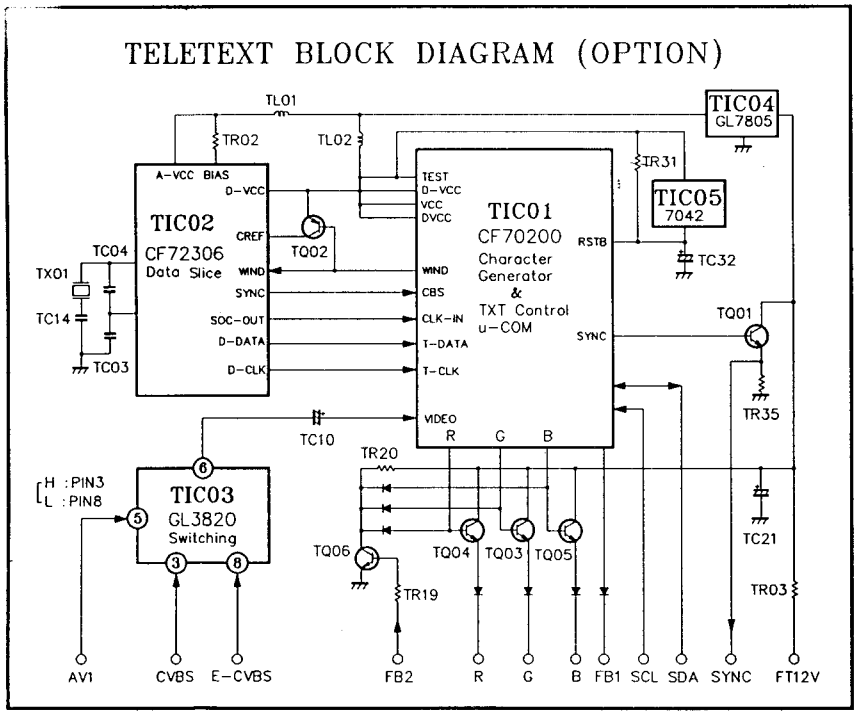
1. Voltages with VTVM from point to chassis ground, line voltage is 230Vac +/- 20% volts, (240Vac +/- 20% in ENGLAND, AUSTRALIA, NEWZEALAND)
   Signal pattern is colour-bar.
2. The schematic shown is represetative only.
3. All waveforms are taken using a wide band oscilloscope and a low capacity probe.
4. Check Fine tuning, AGC, Brightness, Contrast and Colour controls for best picture, make sure that colour, brightness are in mid-position and contrast is in 75%.





TXT P.C.Board (Component Side)-OPTION





■ Alignment procedures

1. It is safe to adjust after using insulating transformer betw the power supply line and chassis input to prevent the ris electric shock and protect the instrument.
2. Never disconnect leads while the TV receiver is on.
3. Don't short any portion of circuits while power is on.
4. The adjustment must be done by the correct appliances. But this is changeable in view of productivity.
5. Unless other-wise noted, set the line voltage to 230V±2 50/60hz.

■ Test Equipment required

1. VIF sweep generator
2. Color bar/cross-hatch pattern generator
3. DC power supply (24V) X 2
4. Digital multi-meter
5. Oscilloscope

● Regulated B+ adjustment

Test Point : TP 1

Adjust : VR 801

1) Turn the TV set to receive a broadcast signal.
2) Set color, bright, contrast to max. position.
3) Connect DC voltmeter to the TP 1 (R437).
4) Adjust VR801 for 112V $^{+0.3}_{-0.1}$ as to smaller model than 21 inch
   118V $^{+0.3}_{-0.1}$ as to 21 inch.

NOTE: This adjustment should be performed after warm up for 10 minutes.

● VCO (Voltage Controlled Oscillator)

1. Connect the measuring equipment to the TV as shown Fig

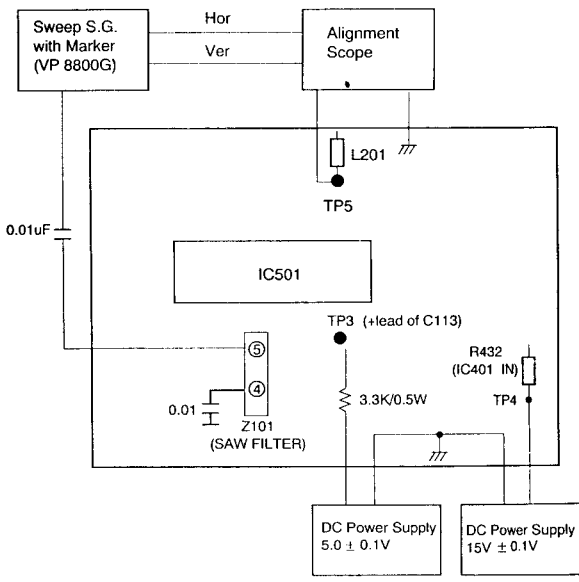
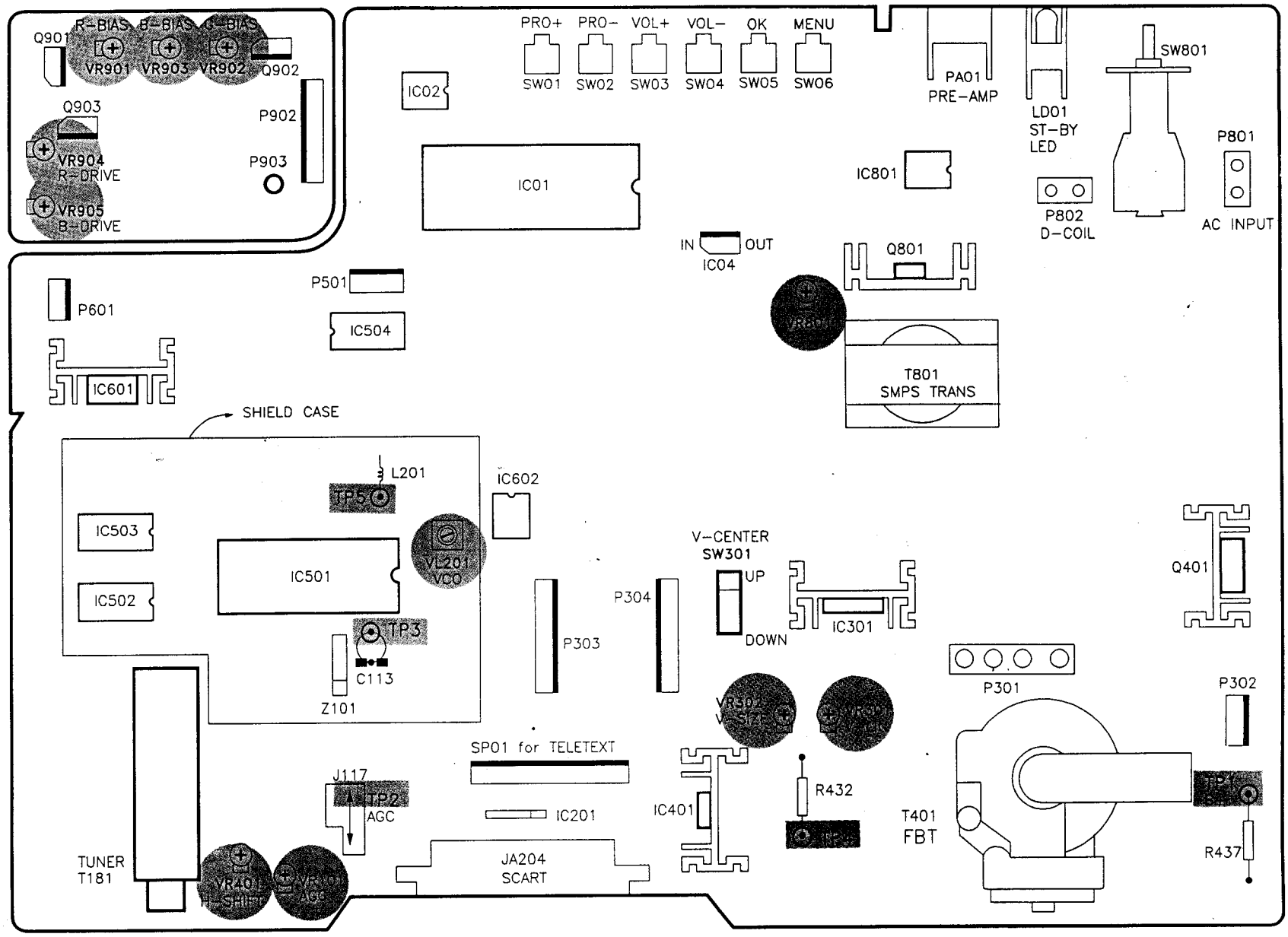


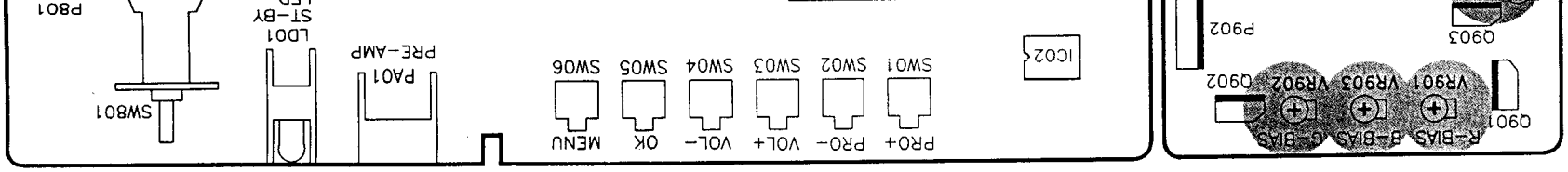
Fig. 1 Connection Diagram of equipment

Alignment/Test Point Location Guide

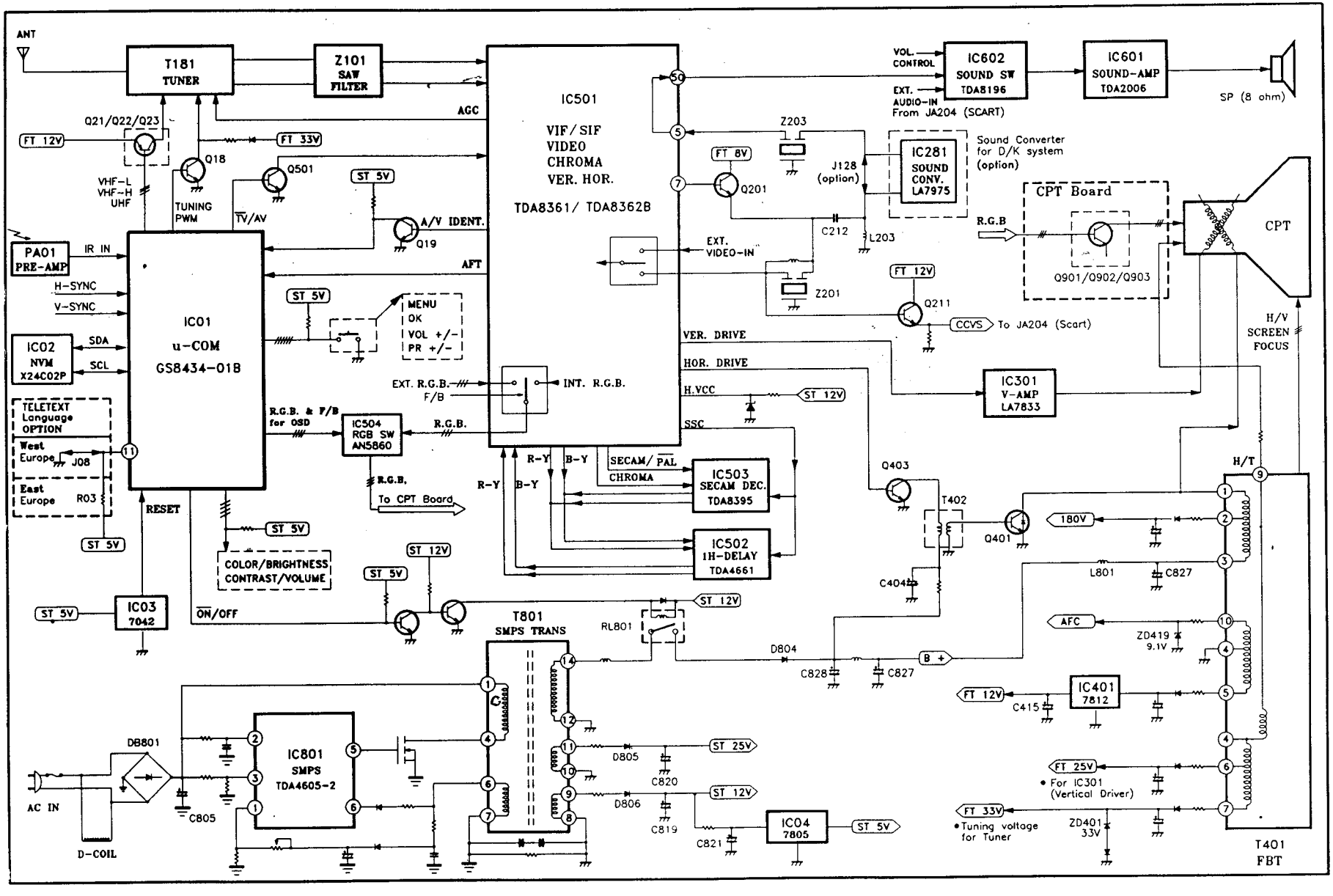
Fig. 1 Connection Diagram of equipment

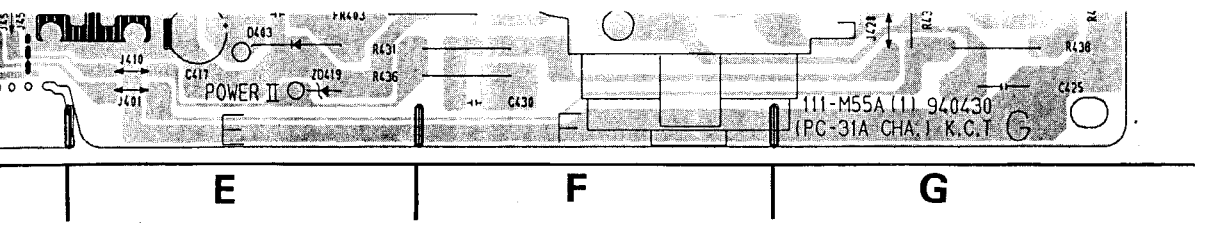
Alignment/Test Point Location Guide



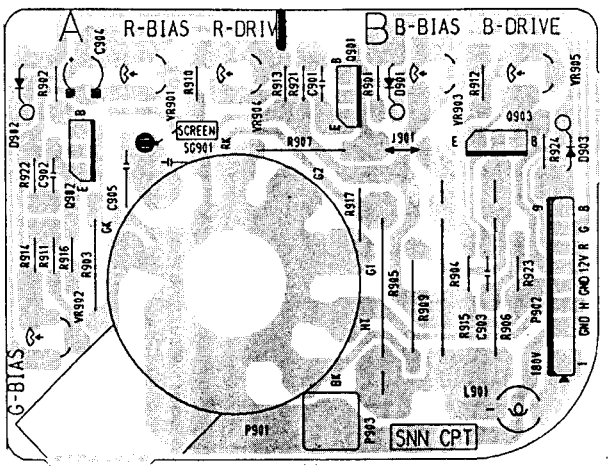


Block Diagram





CPT Board (14")



PCB P/N	Adoption	Remarks
111-N01A	14 inch, SNN CPT (for CKD MODEL)	• Main parts Location are all the same. • There are two kinds of CPT Board, one for SNN CPT(14"), the other for HiFo CPT (20", 21").
111-M92A	14 inch, SNN CPT (for complete set)	
111-N22A	20", 21" inch, HiFo CPT (for CKD MODEL)	
111-M55A	20", 21" inch, HiFo CPT (for complete set)	

Wiring Diagram